Major Dw. Harris
NYNG
Civil Engineer
Suffolk County Air National Guard Base
Westhampton Beach, New York 11978-1294

Re: Comments on the Additional Investigation Work Plan for Phase II/IV-D Remedial Action Plan for the Fire Training Area

Dear Major Harris:

The submitted Additional Investigation Work Plan for Phase 11\1V-A Remedial Action Plan for the Fire Trainig Area was reviewed by EPA. A copy of our comments are attached for your information.

As you can see, the comments to this Work Plan are not extensive, but indicate some deficiencies.
The ultimate goal of the additional investigation was not clear, which made it difficult to recognize the ability of the study to achieve the final objectives. Additionally, the title for the study should be changed from a Remedial Action Plan to a Confirmation Study since the results will lead to a remedial investigation not a remedial action.

The plan, as it is presented, is designed to locate the source of the 2-butanone contamination. The scope of work includes the exploratory monitoring elements of hydrogeological study. However, no effort is made to further determine the full extent of existing contamination beyond that which was previously identified in the site characterization report (1987). The objectives of any new investigation to be performed at this site, must include both locations of the sources and definition of the extent of contamination. These are the criteria we used in our approach to evaluating the adequacy of the Work Plan.

In addition, three aggregated sites (Canine Landfill, Runaway Disposal Area, and Fire Training Area) of the former SCAFB are currently undergoing the HRS scoring procedure. Please bear in mind, that if these sites are included on the National Priority List (NPL), SANGB is required to follow all CERCLA/SARA regulations in order to implement the Superfund/CERCLA requirements. One of the requirements is the definition of the extent of contamination. Developing the comprehensive monitoring program now could save time and money in the future.

Sincerely yours,

Vincent Pitruzzello, Chief
Program Support Branch

Attachments

cc: Robert Hargrove, EPA, Environmental Impacts Branch ✓

Comments

example, on page 2-3, surface drainage is described. It is stated that surface runoff flows principally to the east and figure 1-2 is cited. Figure 1-2 is an area location map. Topographic details cannot be discerned from this figure. It is difficult to recognize and trace the surface water pathways and possible impact of contamination on surface water bodies. A better depiction of site topography must be included if a map depiction is to be used as the proof.

4.
Page 2-3

If the surface waters during the periods of flooding cause the pending along the easternmost ANGB property line (west of the thruway) why were the sediments from this area not sampled?

5.
Page 2-6
2.6

The report states that orange colored leachate from the New Windsor Landfill can be observed flowing across the eastern edge of the Stewart ANGB property. The contaminants from this leachate could have additional impact on the surface water and sediment in this drainage pathway. It is advisable to sample this leachate and the contaminated sediments.

6
Page 6-1

It is stated that in general, split spoon samples were collected at five foot intervals. Under what circumstances were samples not collected at five foot intervals? Accurate subsurface interpretations require frequent sampling; Agency protocol calls for split spoon samples at five foot intervals and at changes in lithology.

7
Page 6-5

The local geology is described. It is stated that the surficial material consists primarily of poorly sorted and <u>well graded</u> glacial tills. The generally accepted definition of a glacial till is a deposit that is poorly sorted, often having clasts of many sizes in a variable finer matrix, and tending to be massive in structure <u>without</u> smooth lamination or <u>graded</u> bedding.

8
Page 6-8
6.5

It is reported that surface and subsurface soils were sampled for various constituents from the Hazardous Substance List (HSL). This list of constituents was given a new name, effective October, 1986. It is currently known as the Target Compound List (TCL). This information is provided in order to terminate any future confusion regarding sampling. All samples must be tested for full TSL. The Appendix E of the report presents only selective chemical compounds in this list. Explanantion needed.

9
Page 6-9

It is stated that the results of the metals analyses indicate that the major cation constituents of soil were present in surface and subsurface soils at levels typical of unconsolidated sediment matrices, and that others were found at low levels. Typical soil metal levels are presented in a table which lists levels by two authors, Lindsay and Swain. How do the soils described by these two authors bear resemblance to the soils in this part of New York State? What are the source rocks of the soils cited by Lindsay and Swain? Why haven't background soil samples been taken for comparison instead? Background sampling for comparison is the appropriate method for judging whether the site's soil (surface water, ground water, and any other matrix) has experienced detrimental effects due to contamination.

10
Page 6-13

PCB contamination exists at the "upgradient" side of the landfill. The narrative states that this phenomenon is difficult to explain. There are a number of possible explanations, however, that clarify the problem. One is that the flow directions have not yet been accurately determined and the "upgradient" location is not upgradient at all. A second explanantion is that there is another source of the contamination. A third explanation is that there is a ground water mound at the landfill. The findings of the elevated PCB in two different points upgradient of the landfill at the different depths (12 and 31 feet) are a serious evidence of contamination. The attention must be focused on finding the sources of contamination which probably relate to past disposal.

11
Page 7-1

(Page 42-Chain of Custody Record)

Explanation needed to identify numbers given to containers used for samples which were taken from different depths.

The titles of the appendices do not completely correspond th their contents.

All substitutions of deviations from WOP should be explained.

If you have any questions, please do not hesitate to call Galina Tsoukanova of my staff at (212) 264-6665.

Sincerely yours,

Carole Petersen, Chief
Site Investigation Section

cc: R. Hargrove EIB

The narrative's description of the piezometers and monitoring wells should detail the identification nomenclature to help alleviate confusion. Note that although table 7-1 provides the nomenclature information, it is very confusing. For example, the letter B may designate a well or piezometer screened in either the basal till, the shale and the till, or the ablation till. It would be less confusing if the designated letter were to stand for one of the latter screened intervals for all cases.

12
Page 7-5

The narrative describes fluctuating ground water elevations. This is attributed to the low permeability of the formations and variable recharge conditions following rainfall. The narrative also states that the contractor periodically measured ground water levels in the wells during the program. Periodic sampling during this program, however, is not sufficient to quantify the hydrologic flow regime. Four water level sampling events occurred, all within a two month period. It is therefore very premature for the contractor to reach a final conclusion concerning the hydrologic regime at this site. Natural and man-made causes for fluctuations have not been fully explored by the contractor. For example, there may be purge wells activated near the site at different times. There may be fluctuations due to tidal cycles. In addition, the possibility of seasonal variations has not yet been ecamined. If variable recharge is to be considered a cause for the fluctuations identified, then the contractor should provide the specific precipitation data for the dates preceding and following the sampling events. Further, the time the four sampling events occurred was not provided. Were all wells/piezometers sampled within a small time-frame (within 1 - 6 hours)? Did the four sampling events take place during the same time of day? How were the water level measurements obtained?

13
Page 7-5
7.2

It appears that there is no reliable basis for averaging of the hydraulic conductivity values in basal and ablation till together. A single measurement of hydraulic conductivity for ablation till is insufficient data for this purpose.

14
Page 7-5

The narrative describes the method used to determine the hydraulic conductivity of the site's aquifer(s). However, the only information provided is that the four monitoring wells were used for rising head tests. A brief description of this rising head test is also provided. The appendix contains the field data obtained during these tests. However, there is no description of the manner in which hydraulic conductivity (K) was determined. No equations are provided in either the narrative or the appendix. There are numerous equations for determining K. It is not within the scope of this review to go through numerous equations and calculations to determine how the contractor derived the values. It is the contractor's responsibility to support the values provided. Did the contractor use one of the Hvorslev or Cooper equations? What assumptions did the contractor use in choosing the equation for determining K? Any conclusions made regarding the site's K must be deemed premature until additional information is provided.

15
Page 7-8

The narrative states that ground water saturates the ablation till only near the toe of the landfill and that the ablation till in the site's upland areas is unsaturated. Perhaps there is a ground water mound caused by the landfill.

16
Page 7-8
7.4.1

Where is the deep water supply well located that tops the ground water in the bedrock. Are the analytical data available?

17
Page 7-12

It is more likely that "upper less permeable portion of the bedrock related to the weathered zone, but not to the bedrock itself which is, according to the local geology, fractured in the upper part for a distance of at least 10 feet. Based upon current sampling data, it is clear that there is good evidence for concluding that there is the potential for leachate from the landfill to migrate downward, into the bedrock (which is fractured). Yet the executive summary makes the statement that the bedrock is a confined system (page E-2).

18
Page 8-1
8.1

It is advisable to show on the topo map all storm drainage systems (manmade and natural) which discharge the surface water to the Recreational Pond, eastward to Silver Stream, and into Lake Washington.

19
Page 12.5
12.1

More follow-ups are necessary to insure contaminants are not flowing into Lake Washington.

20
Page 13-1

It is reported that ground water in the till discharges under confined conditions. Page 7-12 describes the till as unconfined. The correct condition is unconfined.

21
In the previous report of Dames/Moore - 1985 (Page 10, 5.2) there are indications of "Swamps" located to the west and south of the landfill. These wetlands also are indicated on the topographical map (New York Quadrngles, 1957, 7,5 minute Series). It is not clear from the report whether any of these wetlands were observed during this investigation.

22
The previous investigation (Dames and Moore, 1986) indicated the pesticide contamination to a depth of at least 45 feet and at a distance of 30 feet from the pesticide pit. There is a possibility of migration of pesticides (in spite of their high sorbtion ability) vertically downward and horizontally along the fractured till and the top of the bedrock. But in the recent investigation all samplings of the soil and ground water were focused only on the shallow substrata. It is advisable to consider the potential for migration of pesticides (or their plume) at the deeper depths.

The data available in this report is inadequate to draw the conclusion that there has not been substantial migration of compounds from the sites. The sampling of soils, ground water and surface water was very limited for such serious contaminants as pesticides and PCB's. The finding of the pesticides in the soils at a depth of 25-35 feet and in ground water at 35-15 feet in the vicinity of pesticide pit upgradient of the landfill and in the sediment and surface water in the toe of the landfill is evidence of contamination. The elevated levels of the PCB Araclor 1254 found in two different points upgradient of the landfill at the depths of 12 and 31 feet is also proof of contamination. Some compounds of VOC 's and SVOS's (below and above D.L) identified in the toe of the landfill could be the result of landfill leachate.

But the real concentration of contaminants, their extent, existence and configuration of the potential plume were not estimated in the report based on existing data.

The local geological condition of the site sugests that potential for horizontal and vertical migration of pesticides could exist, even downward into the bedrock.

Based on the presented data, the expanded monitoring program (including the sampling of all media) neds to elucidate the site hydrogeological regime beneath and downgradient the landfill. The number of monitoring wells should be sufficient to evaluate the geology and potential pathways of contaminants migration. Special attention should be paid to the fractured zone of the bedrock.

Pesticide Removal Project

This report was reviewed by EPA but the quality of the presented material makes it difficult to come to the any conclusion. Our first impression is that the report was done in a hurry, without careful adjustment to tis work plan and final design specifications and without proper proofreading.

There are many discrepancies which cannot be understood without further explanation. These unresolved discrepancies call in question the quality and completeness of the performed cleanup of the pesticide pit. The objective of the cleanup of the pesticide pit were:

1.) The removal of the contaminants up to the cleanup level of pesticide equal to 10ppm.
2.) Establishing the approximate depth of the contaminants and the possibility of contaminant migration.

The report in it's recent condition doesn't give possible proof of the complete removal of pesticide, and there is no evidence of the approximate depth to which the contaminants have migrated.

The analytical part of the report lacks source importnat information like the results of the split samples which provide an opportunity for an independed check on the precision and accuracy of the analytical data.

The following comments are for your consideration on the subject document.

1. Page 5 Section 3 (C)

   Simply because no waste materials were found in the southern end of the pit does not mean it should be assumed to be uncontaminated. One cannot reach this conclusion withour sampling.

   How was the cleanup level of 10ppm in the soil of pesticide pit established? Explanation Needed.

2. Page 6 and 16 Fig 3

   The horizontal extent of the final base of excavation and vertical profiles of the trenches inside the pesticide pit should be stated clearly.

3. The report states that instead of drilling for samples it was decided that digging a series of three trenches in the bottom of the pit would approximate the sampling grid row lines. Soil samples were extracted from the sides of these trenches at the specific depths below the pit bottom grade. If the profile of the final pit excavation given in figure 3, is similar to all three trenches inside PBS, the question arises as to how the depths of 6 feet were reached from the initial surface of the pit bottom when the distance between initial surface of the pit and final depth of excavation of trenches does not exceed 2 feet. Explanation needed.

4. Page 7 Section E Page 17

   The installation of a 20 mil high density poly-ethylene liner along the vertical walls of the pit after its completed cleanup was stipulated by WOP (WOP, Page 7). It is not clear from the report whether the contractor followed this procedure.

5. Page 15, Page 21-25

   There is no indication in the report on the location of the background samples. Explanation needed:

   1) Where are these samples located?
   2) Do these background samples correspond to background samples #1 and #2 mentioned in analytical tables on pages 21-25?
   3) From what depths were these background samples taken?
   4) Was the type of the soil samples in accordance to the soil of pesticide pit?
   5) Were the background samples representative of the type of soil encountered in the pit?

Page 26, Analytical Table

The title of the table is. "Analysis of background samples." All these samples were taken from the surface of the bottom of the pit. How can these samples be considered background samples? Please explain.

Page 26

Explanation of the numerical rows of a grid pattern and other specifications, given in the table on page 26, is needed.

Page 26 and Fig 5

The computation of the total DDT should be proofread for accuracy. The total amount of DDT in the analysis report on Page 26 and 36 does not always correspond to the total DDT shown for same analysis on figure 5. Special attention should be given to the sample #8060245 from the depth of 6 feet (row 5). If the real total of DDT is 40.64ppm (which is four times higher than the cleanup level excavation for cleanup of PBS must be continued until reaching level). In some cases the actual amount of total DDT is much higher than that shown on Figure 5.

Page 27-30

The analysis of two drums is presented in the report. It is not clear which of the numerous drums were drum #1 and #2. At what depth were they found? Why are the analysis of drums #1 and #2 under lab numbers 8050127 and 805028 on page 27 called "Analysis of pit waste water samples" When the analysis of the same drums under the same lab numbers on page 28 are called "Analysis of background samples". What kind of background samples are they? Explanation needed.

Page 21-26 Analysis Report

The samples were not tested for full Target. Compound List (TCL). Various elements and compounds are missing.

Page 5 Sec.d

Regarding the composite samples. It is not clear from the report how the samples were composited. Please provide a detailed explanation of which samples were composited and show the location and depths of all composite samples

Page 42

Chain of custody record states that the composite samples were split with the National Guard. The split samples, stipulated by WOP, should be sent to the designated laboratory and forwarded to USAF OEHL/SA (WOP, page 7). The report presents only the analysis report from GEO-Con's analytical subcontractor,Lancy Environmental Services Company. Were the quality control duplicates analysed, by which laboratory? Where are the analytical results of these samples?